Siberian Vegetation.—Baron Nordenskjold in his "Voyage of the Vega," gives a sketch of a journey up the Yennissi River, in which occurs the following account of the vegetation: "As is the case with all the other Siberian rivers running from south to north, the western strand of the Yenisej, wherever it is formed of loose, earthy layers, is also quite low and often marshy, while on the other hand the eastern strand consists of a steep bank, ten or twenty metres high, which north of the limit of trees is distributed in a very remarkable way into pyramidal pointed mounds. Numerous shells of crustacea found here, belonging to species which still live in the Polar Sea, show that at least the upper earthy layer of the *tundra* was deposited in a sea resembling that which now washes the north coast of Siberia."

"On the slopes of the steep *tundra* bank and in several of the *tundra* valleys there is an exceedingly rich vegetation, which already, only 100 kilometres south of Yefremo-Kamen, form actual thickets of flowering plants, while the *tundra* itself is overgrown with an exceedingly scanty carpet, consisting more of mosses than of grasses. Salices of little height go as far north as Port Dickson (73° 30′ N. L.); the dwarf birch (*Betula nana*, L.) is met with, though only as a bush creeping along the ground, at Cape Schaitanskoj (72° 8′ N. L.); and here in 1875, on the ice-mixed soil of the *tundra*, we gather ripe cloudberries. Very luxuriant alders (*Alnaster fruticosus*, Ledeb) occur already at Mesenkin (71° 28′ N. L.), and the Briochov Islands (70° to 71° N. L.) are in several places covered with rich and luxuriant thickets of bushes. But the limit of trees proper is considered to begin first at the great bend which the river makes in 69° 40′ N. L, a little north of Dudino. Here the hills are covered with a sort of wood consisting of half-withered, grey, moss-grown larches (*Larix Sibirica*), which seldom reach a height of more than seven to ten metres, and which much less deserve the name of trees than the luxuriant alder bushes which grow nearly 2° farther north. But some few miles south of this place, and still far north of the Arctic Circle, the pine forest becomes tall. Here begins a veritable forest, the greatest the world has to show, extending with little interruption from the Ural to the neighborhood of the Sea of Ochotsk, and from the fifty-eighth or fifty-ninth degree of latitude to far north of the Arctic Circle, that is to say, about one thousand kilometres from north to south, and perhaps four times as much from east to west. It is a primeval forest of enormous extent, nearly untouched by the axe of the cultivator, but at many places devastated by extensive forest fires."

"On the high eastern bank of the Yenisej the forest begins immediately at the river bank. It consists principally of pines; the Cembra pine [*P. Cembra* L.], valued for its seeds; enormous larches; the nearly awl-formed Siberian pine [*P. Sibirica*, Ledeb.]; the fir [*P. obovata*, Turcz.]; and scattered trees of the common pine [*P. sylvestris*, L.]. Most of these already north of the Arctic Circle reach a colossal size, but in such a case are often here, far from all forestry, grey and half-dried up with age. Between the trees the ground is so covered with fallen branches and stems, only some of which are fresh,

the others converted into a mass of wood-mould held together only by the bark, that there one willingly avoids going forward on an unbroken path. If that must be done, the progress made is small, and there is constant danger of breaking one's bones in the labyrinth of stems. Nearly everywhere the fallen stems are covered, often concealed, by an exceedingly luxuriant bed of mosses, while on the other hand tree-lichens, probably in consequence of the dry inland climate of Siberia, occur sparingly. The pines, therefore, want the shaggy covering common in Sweden, and the bark of the birches which are seen here and there among the pines is distinguished by an uncommon blinding whiteness."—*Nature.*

Some Notes on Yucca.—YUCCA ELATA: Trunk 3 to 5 feet or more high, leaves linear rigid sharp pointed, filamentose on the white margins; with white oval acute or acuminate bracts as long as the pedicels; flowers white, segments ovate acute, ovary attenuated into a whitish style; capsule cylindrical-ovate obtuse short-cuspidate; seeds large, ½ inch wide narrowly wing-margined.—*Y. angustifolia*, var. *elata*. Engelm. Notes on Yucca p. 50. *Y. constricta*, Baker, Yuccoideæ p. 229; not Buckley.

Deserts of Arizona probably extending into southern New Mexico and Mexico. Altogether one of the most stately Yuccas, distinguished from the closely allied *Y. angustifolia*, with which I had formerly united it by its distinct trunk, which is usually 3 to 5 feet, but which I have seen even 10 or 11 feet high, and 3 to 7 inches thick, and especially by its long flowering scape, 3 to 7 feet, naked below, and bearing a much branched panicle often 5 feet long; flowers spreading, 3½ to 4 inches wide, while those of the allied species are more globose, mostly of greenish color, with broadly oval concave segments, with a green stigma; capsule similar to that of *angustifolia*, seeds of same size as in that species but with a narrower margin. Young specimens flower before they make a trunk and they look much like *Y. angustifolia* but can always be distinguished by the naked scape and by the characters of the flower.

Yucca constricta, Buckley, appears to be a form of *Y. angustifolia* with a short trunk; the constricted capsules ascribed to it are not normal but occasionally occur in all species of Yucca.

YUCCA MACROCARPA, Engelm. 6.224 of this journal, has now been found by C. G. Pringle in flower; the panicle is densely pubescent; flowers about 2½ to 3½ inches wide with broadly oval acutish segments. *Y. baccata* has a glabrous panicle and larger flowers with narrow tapering segments. *Y. Schottii*, Engelm., Yucc. 46, from Arizona, is known only from Schott's notes and very poor specimens and has never been identified since. Its panicle is likewise pubescent; its leaves short, narrow and very thick, with few thin fibres. It may possibly be a small-leaved form of *Y. macrocarpa*, which also shows a few thin fibres on the leaves. Both are recommended to the study of observers.—G. ENGELMANN.